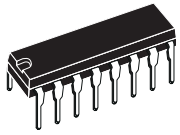
VISIT…

# TDA7268

## 2 x 2W STEREO AUDIO AMPLIFIER

- WIDE OPERATING RANGE FROM 4.5V TO 18V
- $P_{OUT}$ = 2W @ THD 10% 12V/8Ω
- INTERNAL FIXED GAIN 32dB
- NO FEEDBACK CAPACITOR
- NO BOUCHEROT CELL
- THERMAL PROTECTION
- AC SHORT CIRCUIT PROTECTION
- SVR CAPACITOR FOR BETTER RIPPLE REJECTION
- LOW TURN-ON/OFF POP
- VERY FEW EXTERNAL COMPONENTS
- STAND-BY MODE ($I_{ST-BY}$ < 300µA)



**POWERDIP (8+8)**

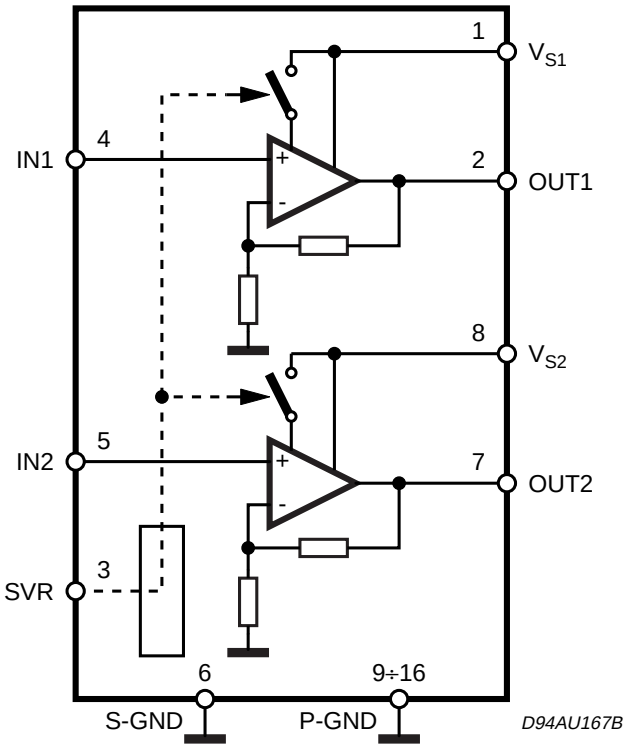
**ORDERING NUMBER:** TDA7268

### DESCRIPTION

The device TDA7268 is a new technology stereo Audio Amplifier in DIP package specially designed for TV application.

Thanks to the fully complementary output configuration the device delivers a rail to rail voltage swing without need of boostrap capacitor.

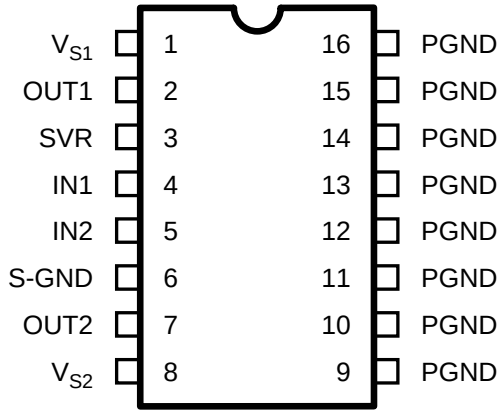
### BLOCK DIAGRAM



## ABSOLUTE MAXIMUM RATINGS

| Symbol | Parameter | Value | Unit |
|---|---|---|---|
| $V_S$ | Operating Supply Voltage | 18 | V |
| $I_O$ | Output Peak Current | 1.5 | A |
| $T_{op}$ | Operating Temperature Range | 0 to 70 | °C |
| $T_j$ | Junction Temperature | 150 | °C |
| $T_{stg}$ | Storage Temperature Range | -40 to 125 | °C |

## PIN CONNECTION

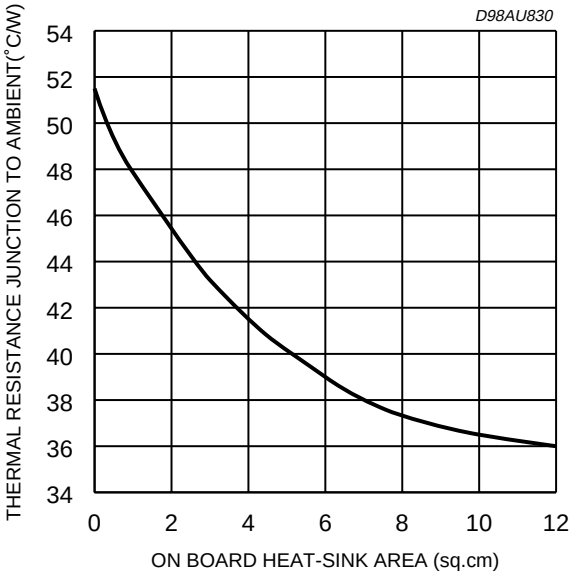



*D94AU164A*

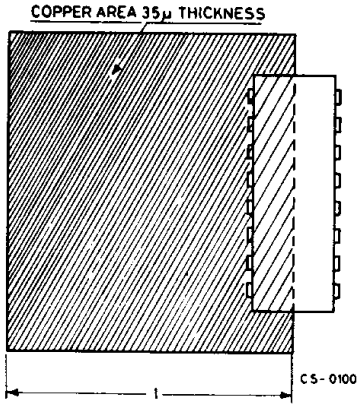
## THERMAL DATA

| Symbol | Parameter | | Value | Unit |
|---|---|---|---|---|
| $R_{th\ j\text{-}amb}$ | Thermal Resistance Junction to ambient (on PCB) | Max. | 70 | °C/W |
| $R_{th\ j\text{-}case}$ | Thermal Resistance Junction to case | Max. | 15 | °C/W |

Rth with "on Board" Square Heat Sink vs. Copper Area



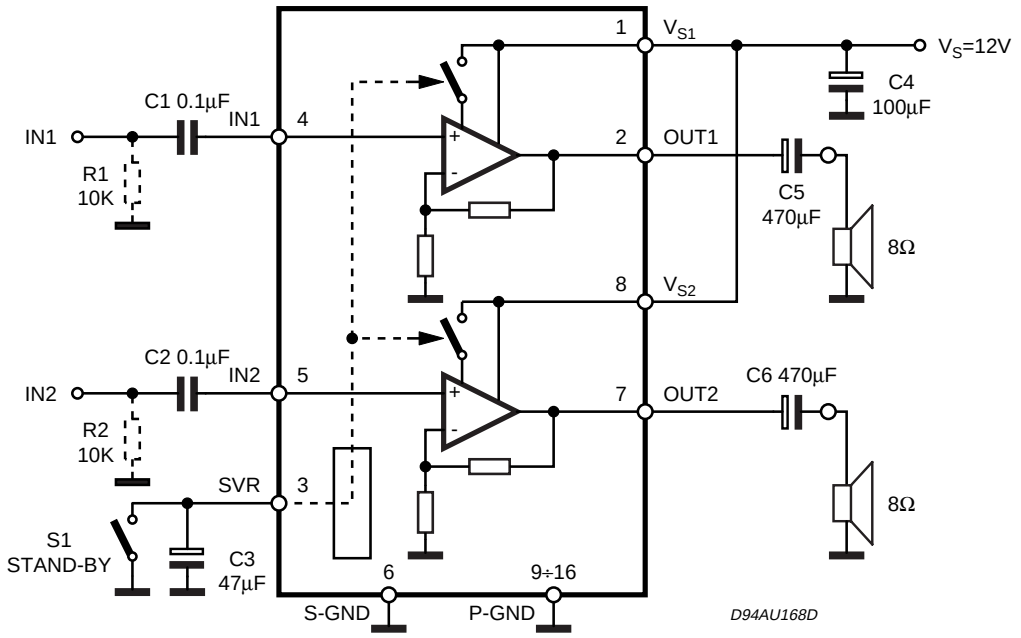

Example of heatsink using PC board copper



**ELECTRICAL CHARACTERISTICS** ($T_{amb}$ = 25°C; $V_S$ = 12V; $R_L$ = 8Ω; f = 1KHz; unless otherwise specified.)

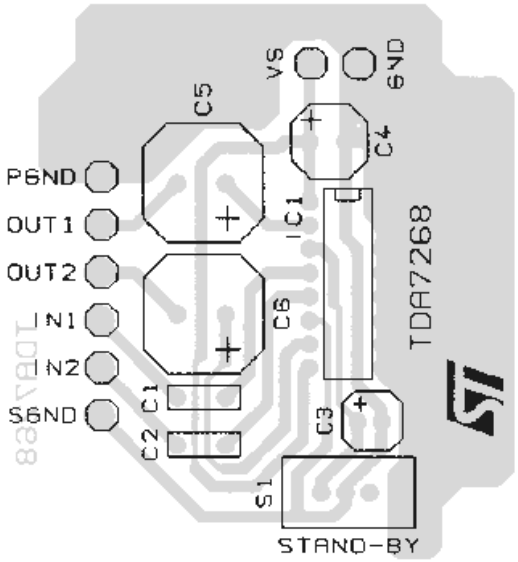
| Symbol | Parameter | Test Condition | Min. | Typ. | Max. | Unit |
|---|---|---|---|---|---|---|
| $V_S$ | Supply Voltage Range | | 4.5 | | 18 | V |
| $I_S$ | Quiescent Current | | | 40 | 60 | mA |
| $I_{sb}$ | Stand-By Current | Pin 3 shorted to GND | | 0.15 | 0.3 | mA |
| $V_O$ | Quiescent Output Voltage | | 5.5 | 6 | 6.5 | V |
| $A_V$ | Voltage Gain | | 31 | 32 | 33 | dB |
| $\Delta A_V$ | Voltage Gain Matching | | | | 1.0 | dB |
| $R_{IN}$ | Input Impedance | | 50 | 100 | | KΩ |
| $P_O$ | Output Power | THD = 10% | 1.9 | 2 | | W |
| THD | Distortion | $P_O$ = 1W | | 0.1 | 0.4 | % |
| SVR | Supply Voltage Rejection | $V_{rip.}$ = 150mVrms; $F_{rip.}$ = 1KHz<br>$R_S$ = 10kΩ<br>$R_S$ = 50Ω | <br><br>40 | <br>50<br>46 | | <br>dB<br>dB |
| $e_n$ | Total Input Noise Voltage | Rg = 10KΩ; BW = 20Hz to 20KHz | | 4 | 8 | μV |
| CT | Cross Talk | $P_O$ = 1W; | 50 | 60 | | dB |
| $V_{sb}$ | Stand-By Enable Voltage | $I_{SB}$ < 300μA | | | 1 | V |
| $A_{sb}$ | Stand-By Attenuation | | 60 | 80 | | dB |
| $P_O$ | Output Power | THD = 10%; $V_S$ = 9V; $R_L$ = 4Ω | | 1.8 | | W |

**Fig. 1:** Standard Test and Application Circuit




Note: Add R1 & R2 on demoboard only for DC tests.

**Fig. 2:** PCB And Components Layout Of The Application Circuit of Figure 1




**APPLICATION HINTS:**

For 12V supply and 8Ω speaker application, its maximum power dissipation is about 2W.

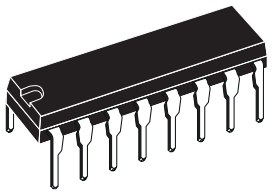
Assumming that max ambient temperature is 70°C. Required thermal resistance of the device and heat dissipating means must be equal to (150 - 70)/2 = 40°C/W.

Junction to pin thermal resistance of the package is about 15°C/W.

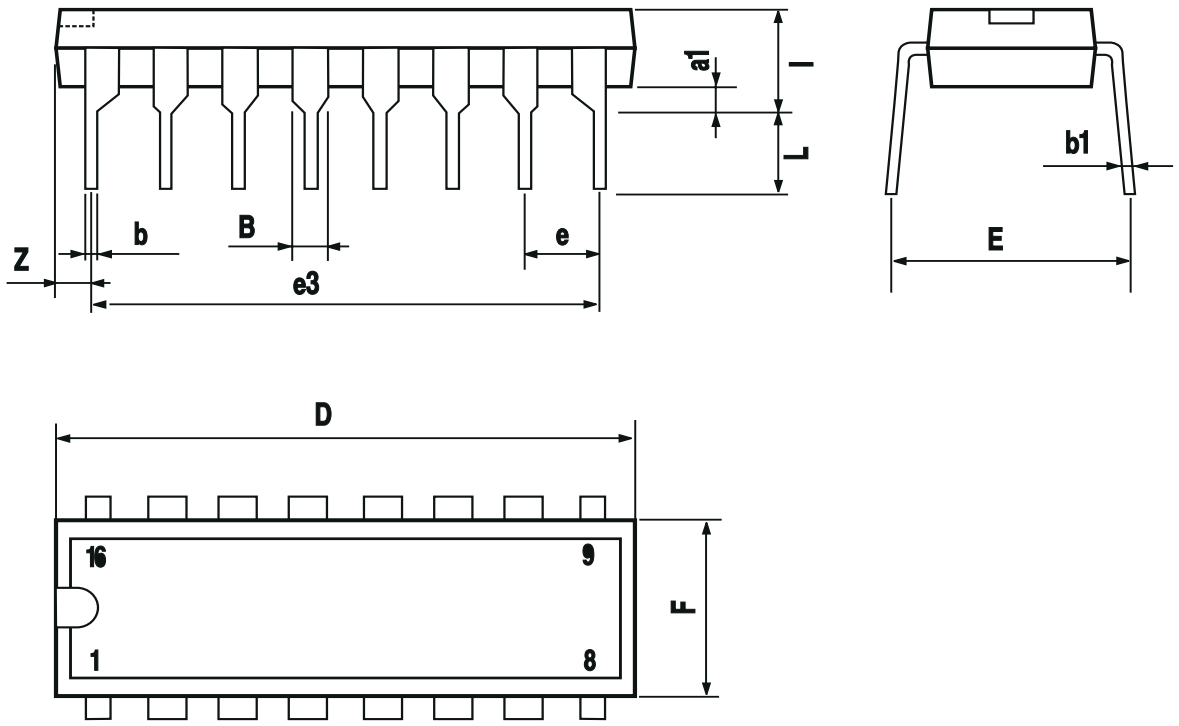
That means external heat sink of about 25°C/W is required. Stand-By switches must be able to discharge $C_{svr}$ current.

| DIM. | mm | | | inch | | |
|---|---|---|---|---|---|---|
| | MIN. | TYP. | MAX. | MIN. | TYP. | MAX. |
| a1 | 0.51 | | | 0.020 | | |
| B | 0.85 | | 1.40 | 0.033 | | 0.055 |
| b | | 0.50 | | | 0.020 | |
| b1 | 0.38 | | 0.50 | 0.015 | | 0.020 |
| D | | | 20.0 | | | 0.787 |
| E | | 8.80 | | | 0.346 | |
| e | | 2.54 | | | 0.100 | |
| e3 | | 17.78 | | | 0.700 | |
| F | | | 7.10 | | | 0.280 |
| I | | | 5.10 | | | 0.201 |
| L | | 3.30 | | | 0.130 | |
| Z | | | 1.27 | | | 0.050 |

## OUTLINE AND MECHANICAL DATA



**Powerdip 16**



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